

MASSACHUSETTS MOSQUITO CONTROL ANNUAL OPERATIONS REPORT



2007 Year of Report

Date of Report: 2/20/07

Project/District Name: **Berkshire County Mosquito Control Project**

Address: 19HARRIS ST.

City/Town: PITTSFIELD

Zip: 01201

Phone: 413 447-9808

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Report prepared by: **JAKE JURGENSON**

If you have a mission statement, please include it here:

ORGANIZATION SETUP:

Please list your staffing levels for the year of this report:

Full time: 1

Part time:

Seasonal: 1

Other: (please describe)

Please break these down into the following areas:

Administrative staff: 1

Field staff: 2

Please check off all that apply, and list employee name(s) next to each category:

☒ Public relations JAKE JURGENSON

☐ Information technology

☐ Entomologist

☐ Biologist

☒ Education JAKE JURGENSON

☐ Laboratory

☒ Operations JAKE JURGENSON

☒ Facilities JAKE JURGENSON

☐ Other (please list)

For the year of this report, we maintained:

4 vehicles

modified wetland equipment (list type)

2 ULV sprayers (list type) LONDON AIR BECOMIST

Larval control equipment (list type)

Other (please be specific):

Comments: _____

INTEGRATED PEST MANAGEMENT (IPM):

Definition TBD

Please check off all of the services that you currently provide to your member cities and towns as part of your IPM program; details of these services are in the next sections.

- ☒ **Larval mosquito control**
- ☒ **Adult mosquito control**
- ☐ **Source reduction**
- ☒ **Ditch maintenance**
- ☐ **Open Marsh Water Management**
- ☐ **Adult mosquito surveillance**
- ☒ **Education, Outreach & Public education**
- ☐ **Research**
- ☐ **Other (please list):**

Comments: BECAUSE OF LACK OF RESOURCES FUNDING, STAFF,ETC
WE CANNOT PROVIDE ALL THE SERVICES LISTED ABOVE
TO OUR
MEMBER TOWNS.

LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: ELIMINATE AND REDUCE
NUISANCE MOSQUITOES IN DISTRICT MEMBER TOWNS.

Please give the time frame for this program: APRIL THRU MAY,
JUNE,JULY,AUGUST AFTER HEAVY RAINFALL.

Describe the areas that this program is used: VERNAL POOLS, MARSHES, FLOOD
PLAINS, PASTURES, ROADSIDE DITCHES.

Do you use:

- ☒ **Ground applied (includes hand, portable and/or backpack)**
- ☐ **Helicopter applications**

☐ **Other (please list):**

Comments: _____

What products do you use in – (please use product name and EPA#)

Wetlands: VECTOBAC G 275-50

Catch basins: ALTOSID BRIQUETS 30 DAY 2724-375

Containers: VECTOBAC G 275-50

Other (please list):

Please list the rates of application for the areas listed above:

Wetlands: 4 LBS. PER ACRE

Catch basins: 1 PER BASIN

Containers: AS NEEDED

Other:

Comments: _____

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: REDUCE NUISANCE MOSQUITO POPULATIONS IN MEMBER TOWNS

Please give the time frame for this program: JUNE 1 THRU SEPT. 15TH

Describe the areas that this program is used: PARKS, SUMMER CAMPS, CAMPGROUNDS, RESIDENTIAL PROPERTIES, EVENTS, DISTRICT TOWN STREETS

Do you use:

☒ **Truck applications**

☐ **Portable applications**

☐ **Aerial applications**

☐ **Other (please list):**

Comments: _____

Please list the names of the products used with EPA #:

1). ANVIL 10 + 10

2).

3).

4).

Please list your application rates for each product:

- 1). .62 OZS. PER ACRE
- 2).
- 3).
- 4).

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas

APPLICATIONS ARE BASES ON SERVICE REQUESTS AND DISTRICT SURVEILLANCE, LANDING + BITING COUNTS

Comments: _____

SOURCE REDUCTION

Do you perform source reduction methods such as tire/container removal? Yes

If yes, please describe your program: WE INSPECT SERVICE REQUEST PROPERTY FOR CONTAINER BREEDING AND IF BREEDING IS FOUND WE INFORM PROPERTY OWNER AND EITHER DISTRICT STAFF OR OWNER REMOVES BREEDING CONTAINERS.

Comments: _____

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

- ☒ Inland/freshwater
☐ Saltmarsh

If yes, please describe: DUE TO LACK OF STAFF WE ONLY MAINTAIN OLD DITCHES TO REDUCE MOSQUITO BREEDING HABITAT OR POTENTIAL HABITAT. THE DITCHES HAVE BEEN MAINTAINED AS NEEDED OVER THE YEARS. WE HAVE NOT DONE ANY NEW DITCH MAINTENANCE IN YEARS.

Please check off all that apply INLAND DITCH MAINTENANCE:

- ☒ Hand tools
☒ Mechanized equipment
☐ Other (please list):

Comments: MECHANIZED EQUIPMENT BRUSH SAWS, CHAIN SAWS

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

- ☐ Hand cleaning
☐ Mechanized cleaning
☐ Other (please list):

Comments: _____

Please give an estimate of cumulative length of ditches maintained from the list above INLAND:

Hand cleaning 7,865 LINEAR FEET
Mechanized cleaning
Other (please list):

Comments: DITCH MAINTENANCE ONLY DURING THE MONTHS OF SEPTEMBER THROUGH NOVEMBER

Please give an estimate of cumulative length of ditches maintained from the list above SALTMARSH:

Hand cleaning
Mechanized cleaning
Other (please list):

Comments: _____

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? Choose one

If yes, please describe:

Please give an estimate of total square feet or acreage:

Comments: _____

ADULT MOSQUITO SURVEILLANCE

Do you have an adult mosquito surveillance program? Yes

Please check off all that apply:

- ☐ Gravid traps

- ☐ Resting boxes
- ☒ CDC light traps
- ☐ CDC light traps w/CO₂
- ☐ ABC light traps
- ☐ ABC light traps w/CO₂
- ☐ NJ light traps
- ☐ NJ light traps w/CO₂

- ☐ Canopy
- ☐ Canopy
- ☐ Canopy
- ☐ Canopy
- ☐ Canopy
- ☐ Canopy

Other (please describe):

Please describe the purpose of this program: BOH IN SOME MEMBER TOWNS REQUEST AREAS OF HIGH ADULT MOSQUITO POPULATIONS IN THEIR COMMUNITY.

AGAIN, BECAUSE OF STAFF SHORTAGES, WHENEVER THERE IS TIME, WE DO ADULT MOSQUITO SURVEILLANCE USING TRAPS.

Do you maintain long-term trap sites in any of your areas? No

If yes, please describe how you chose these long-term sites.

Please check off the species of concern in your service area:

- | | |
|--|--|
| <input type="checkbox"/> <i>Ae. albopictus</i> | <input checked="" type="checkbox"/> <i>Oc. cantator</i> |
| <input type="checkbox"/> <i>Ae. cinereus</i> | <input checked="" type="checkbox"/> <i>Oc. excrucians</i> |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i> | <input type="checkbox"/> <i>Oc. fitchii</i> |
| <input type="checkbox"/> <i>An. punctipennis</i> | <input type="checkbox"/> <i>Oc. j. japonicus</i> |
| <input checked="" type="checkbox"/> <i>An. quadrimaculatus</i> | <input type="checkbox"/> <i>Oc. punctor</i> |
| <input type="checkbox"/> <i>Cq. perturbans</i> | <input type="checkbox"/> <i>Oc. sollicitans</i> |
| <input type="checkbox"/> <i>Cx. pipiens</i> | <input type="checkbox"/> <i>Oc. stimulans</i> |
| <input type="checkbox"/> <i>Cx. restuans</i> | <input type="checkbox"/> <i>Oc. taeniorhynchus</i> |
| <input type="checkbox"/> <i>Cx. salinarius</i> | <input checked="" type="checkbox"/> <i>Oc. triseriatus</i> |
| <input type="checkbox"/> <i>Cs. melanura</i> | <input checked="" type="checkbox"/> <i>Oc. trivittatus</i> |
| <input type="checkbox"/> <i>Cs. morsitans</i> | <input type="checkbox"/> <i>Ps. ferox</i> |
| <input checked="" type="checkbox"/> <i>Oc. abserratus</i> | <input type="checkbox"/> <i>Ur. sapphirina</i> |
| <input checked="" type="checkbox"/> <i>Oc. canadensis</i> | |

☐ Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? No

How many pools do you submit weekly on average?

Please check off the arboviruses found in your area in the past 5 years:

- ☒ West Nile Virus
- ☐ Eastern Equine Encephalitis

☐ Other Please list:

Did the above listed diseases cause human or horse illnesses? No

Please explain: IN 2003 THERE WAS A FEW CROWS THAT TESTED POSITIVE FOR WNV, MOST OF THOSE WERE IN TOWNS NOT IN OUR PROGRAM. THE DISTRICT HAS SENT BIRDS TO DPH THE LAST 2 SEASONS AND NO VIRUS WAS DETECTED.

At what arbovirus risk level did the year begin in your area? (If more than one please list)

WNV: REMOTE
EEE: REMOTE

At what arbovirus risk level did the year end in your area? (If more than one please list)

WNV: REMOTE
EEE: REMOTE

Comments: MY OPINION, I'M SURE THERE IS WNV ACTIVITY IN OUR DISTRICT, BUT IF THERE WAS A LOT OF ACTIVITY I'M SURE A HUMAN WOULD HAVE CONTACTED WNV BY NOW AS IT'S BEEN HERE SINCE 1999.
MOST OF THE DISTRICT AREA IS HEAVILY WOODED WITH LOW POPULATION DENSITIES, BIRDS COULD DIE ANYWHERE AND NEVER BE FOUND.

EDUCATION, OUTREACH & PUBLIC RELATIONS

Do you have an education/public outreach program program? Yes

If yes, please describe:

Please check off all that apply:

- ☐ School based program
- ☐ Website
- ☒ PR brochures/handouts
- ☒ Community events
- ☐ Other (please describe):

Please give an estimate of attendance/participants in this program:

Please list some events you participated in for the year of this report: TOWN MEETINGS, BOH MEETINGS, SELECTBOARD MEETINGS

Please list training events your staff attended: NMCA MEETING, CLARK MOSQUITO CONTROL WORKSHOPS

Comments: DUE TO LACK OF RESOURCES, STAFF, WE WOULD LIKE TO DO MORE EDUCATION/PUBLIC OUTREACH , BUT ARE UNABLE AT THIS TIME.

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? No

If yes, please describe:

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators?

Please check off all that apply:

- ☐ Predatory fish
- ☐ Predatory invertebrates
- ☐ Other (please describe):

Comments: _____

INFORMATION TECHNOLOGY

Does your program use (check all that apply):

- ☒ Computers
- ☐ GIS mapping
- ☐ GPS equipment
- ☐ Computer databases
- ☐ Aerial Photography
- ☐ Other (please describe):

Please describe your capabilities in these areas: BEGINNER

Please describe your current GIS abilities: None

Give details if possible on your GIS abilities:

Comments: _____

REVENUES & EXPENDITURES

Please give a concise statement of revenues & expenditures for the prior fiscal year ending June 30.

FY 07 REVENUES \$ 152,433 EXPENDITURES \$145,057

Comments: _____

PESTICIDE USAGE

Please total your pesticide usage with information from your Mass. Pesticide Use Report, WNV Larvicide Use records and contracted pesticide applications. Applications methods include; hand/backpack, aerial, ULV, mistblower, other (please explain)

Product Name: VECTOBAC G
EPA Reg. #: 275-50
Application method: HAND
Targeted life stage: Larvae
Total amount of concentrate applied: 2,038 LBS.
Comments: _____

Product Name: ADVIL 10 + 10
EPA Reg. #: 1021-1688-8329
Application method: TRUCK MOUNTED ULV SPRAYERS
Targeted life stage: Adult
Total amount of concentrate applied: 42.5 gals..
Comments: _____

Product Name: ALTOSID 30 DAY BRIQUETS
EPA Reg. #: 2724-375
Application method: HAND
Targeted life stage: Larvae
Total amount of concentrate applied: 5.95 lbs.
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one

Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

LARGE AREA EXCLUSIONS

Do you have large areas of pesticide exclusion, such as estimated or priority habitats?
Yes

If yes, please explain, and include maps if possible. BEFORE ANY NEW APPLICATIONS WE CONSULT THE NATIONAL HERITAGE ATLAS FOR CERTIFIED VERNAL POOLS, PRIORITY HABITATS OF RARE + ENDANGERED SPECIES.

WE DO HAVE LARGE AREAS OF FRESHWATER SWAMP WITH PRIORITY HABITATS. DUE TO LACK OF STAFF WE ARE UNABLE TO TREAT THESE AREAS.

SPECIAL PROJECTS

Do you perform any inspectional services such as inspections at sewage treatment facilities or review sub division plans? No

If yes, please elaborate

Do you work with DPW departments or other local or state officials to address stormwater systems, clogged culverts or other areas that you have identified as man-made mosquito problem areas? Yes

If yes, please elaborate: DPW DEPT. HISTORICALLY NEVER PLACE PIPES. TUBES LOW ENOUGH FOR THE FLOWING WATER TO PASS UNDERNEATH ROADS, DRIVEWAYS, ETC. , WHICH CAUSES STAGNET WATER AND CREATES MOSQUITO BREEDING HABITAT.

WE HAVE CONTACTED DPW DEPTS. ON NUMEROUS OCCASIONS ABOUT THIS PROBLEM BUT RARELY HAVE RECEIVED RESPONSES.

Have you worked with these departments on long term solutions? No

CHILDREN AND FAMILIES PROTECTION ACT

Is your program impacted by the Children and Families Protection Act? Yes

If yes, please explain: WE NO LONGER ADULTICIDE SCHOOL PROPERTY DAY CARE CENTERS, ETC.

WE HAVE ALSO FOUND MOST SCHOOLS AND DAY CARE CENTERS DO NOT HAVE AN IPM PLAN IN PLACE FOR MOSQUITO CONTROL.

If you have data on compliance with this Act and your program, please list here:

If you had difficulties with implementation of your program due to this law, please elaborate here:

GENERAL COMMENTS

Please list any comments not covered in this report: _____

DRAFT

Massachusetts Mosquito Control: 2008 Annual Operations Report

12/19/07

Table of Contents

State Reclamation & Mosquito Control Board

- Organizational / Structure – Board / Districts / Commissions
- 2007 Summary / Overview / Highlights

Agency Partnerships / Network

- Draft a statement & (org chart?) illustrating the network of state agencies and other organizations involved in MA Mosquito Control, briefly addressing roles, responsibilities & interactions as they relate.
- **Alisha:** I can work on this & be the point person but will need to call on others for assistance
- **Kim:** Each town also felt more needs to be done but were unaware of all the restrictions, **new legislation**, and how many agencies were involved with mosquito control. As Audubon and VBD Corp and other agencies may know where to hunt down vital information retaining to mosquito control most will not. Is it possible in summary explaining all involved agencies to also have **reference page and contact information**?
 - All agencies roles DAR, DPH, SRB, MAG, F&G, DEP, DCR, MCPs involvement should be explained in this report. Should SRB, MCP, AMCA, NMCA or other like agencies events be listed for public involvement?
- **Heidi:** I also agree that these reports should be factual not commentary, and that related documents from the Reclamation Board or information on the roles of other agencies should be available, referenced (e.g. posted on state website) and that these annual district reports need to stay focused not try to repeat loads of info available elsewhere.

Information Technology & Mapping

Could there be a section for a statewide map referencing member communities across MA. Projects could have in each of these sections specific communities in their Districts.

Glenn: Map(s) showing areas of application would be useful.

Brad: Agreed on the maps, although I am not sure we can swing it for this season as maps should be town-specific. Ideally I would like to see several maps, by town: - key mosquito habitat - habitat areas excluded from application - areas subject to larviciding - areas subject to adulticiding. Eventually, I would like a town to be able to look at map and get a sense of what their mosquito issues are. I think we should start fairly basic with this first round.

Kim: Maps would be useful. Excluded areas need to be listed as well. Who owns them, pays the taxes and what wildlife or plant is being protected.

Towns felt that *restricted areas* should be included and reason behind why. Each town also felt more needs to be done but were unaware of all the restrictions, new legislation, and how many agencies were involved with mosquito control.

Heidi: Specific suggestions:

- Form should ask for maps or other data on where work is taking place, in whatever format this information is available. In particular, there should be an emphasis on identifying locations where disease-carrying mosquitoes are found in multiple years and where repeated treatments are undertaken. If the same areas are being treated over and over, this may help identify priorities for

other actions such as restoration projects that restore fisheries or remove sources of sedimentation that continually create stagnant conditions.

- Data management status and capabilities. Add box to ask if they have metadata. Is it in a form that can be used by others. How available are their data?
- As for mapping of mosquito breeding areas, stormwater systems that breed bridge vectors would be important to map, and to include in data on areas treated/cleaned to the extent any of that work is performed. I realize districts are not responsible for maintaining municipal stormwater systems, but there are opportunities for cooperation and technical assistance, e.g. working with the towns on updating stormwater design and maintenance standards to minimize creation of mosquito habitat, applying larvacides to catch basins and detention areas, or if DPW staff are trained in larvaciding, that should be mentioned in the annual reports. Another opportunity for cooperative work between the districts and municipalities is planning for and replacing/upgrading culverts that repeatedly block flows and/or prevent fish from reaching stream segments. If this kind of work takes place, it should be included in the annual reports.
- There is a link between mapping and efficacy as well. For example, if the same ditches and culverts need to be cleaned year after year, this may point to some priorities for identifying the root source of the sedimentation problem or barriers to fish access, and solving it on a longer term basis.
- In the future to improve reporting (e.g. perhaps we can work to get some funding for all the districts to have computerized recordkeeping tied to a GIS mapping system).
- The reporting should include maps of treated areas, total amount applied and some details around that (time of day, weather conditions), and total amount applied each year (rate doesn't cover that), and
- Descriptions of where the traps are placed, maps of trapping locations with type, and total number of traps per type.
- Provide good summaries based on whatever data is available (including maps) while helping to identify needs for improvements in how data is gathered and reported

Tim:

- As you know, each district varies in how much or how little they have integrated GIS, and while everyone agrees that mapping is an important component of our programs, as Brad stated a few days ago we will need to be patient to allow the districts to come up to speed.
- I agree with your suggestion that if resources are made available for this function then this will increase the timeframe we can make the data available.
- In the Information technology (IT) section it does ask about certain electronic capabilities, and I added a line for details on the GIS abilities. I am certain we will see a wide variety in abilities at this time. I will have a revised draft report to send out today for everyone to look over (revision in red text).

Arbovirus Surveillance

Brad: Factual statements regarding arbovirus in relation to this work should be made - for instance, trapping and WNV finds related to this trapping. Commentary regarding the importance of these activities should be left for the reader to deduce.

Emergency Preparedness? Should a statement be included? If so, in this section?

Education, Outreach & Public Relations

- This section could reference sources for information (media, web sites, how to request services, publications, email / phone #'s, etc) education / training, presentations, community events, etc...
- List this also below in the template section but wondering if it could be one section in the overall document?
- Accessing Annual Operations Reports

Brad: I suspect all reports will be put on project webpages, with links from SRMCB and other pertinent pages

Integrated Pest Management (IPM): **Workgroup needs to finalize IPM definition.**

Brad: I think it worth mentioning how many schools and daycares cannot be service because they have not accounted for mosquito work in their IPM plans (or do not have IPM plans)

Mark: I believe we could do better in a definition of **IPM** noting that all the MCPs may have a different perspective but the below came off the AMCA website

Mosquito control can be divided into two areas of responsibility: individual and public. Most often it's performed following the Integrated Mosquito Management (IMM) concept. IMM is based on ecological, economic and social criteria and integrates multidisciplinary methodologies into pest management strategies that are practical and effective to protect public health and the environment and improve the quality of life. IMM strategies are employed in concert with insecticide. These include source reduction, which incorporates physical control (digging ditches and ponds in the target marsh) and biological control [placing live mosquito fish (*Gambusia*) in the ditches and ponds to eat mosquito larvae]. Other non-chemical control methods include invertebrate predators, parasites and diseases to control mosquito larvae. Adult mosquito biological control by means of birds, bats, dragonflies and frogs has been employed by various agencies. However, supportive data is anecdotal and there is no documented study to show that bats, purple martins, or other predators consume enough adult mosquitoes to be effective control agents.

I might suggest some form of it and apparently Massachusetts does not like to use the IMM acronym but IPM

Mosquito control can be divided into two areas of responsibility: individual and public. Most often it's performed following the Integrated Pest Management (IPM) concept. IPM is based on ecological, economic and social criteria and integrates multidisciplinary methodologies into pest management strategies that are practical and effective to protect public health and the environment and improve the quality of life. IPM strategies are employed in concert with insecticide. These include source reduction, which incorporates physical control (maintaining ditches and ponds in the target marsh) and biological control [placing live mosquito fish (*Gambusia*) in the ditches and ponds to eat mosquito larvae].

FROM SRMCB WEBSITE

Mosquito control projects or districts employ management methods based on Integrated Pest Management (IPM). These standard and recognized methods or practices are the result of many years of experience and up-to-date scientific research. By using IMM, the mosquito control projects and districts integrate a variety of available control strategies i.e. surveillance, source reduction, traps, biological control methods, open marsh water management (OMWM), environmentally acceptable larvicides, and, when necessary, application of adulticides, into a comprehensive program. Ultimately, the strategies used by the mosquito control projects or districts go a long way in protecting the public health and the environment as well as improve the quality of life for Massachusetts's citizens

Heidi: There is a definition of IPM in the MA Pesticide Control Act:
<http://www.mass.gov/legis/laws/mgl/132b-2.htm>

“Integrated pest management”, a comprehensive strategy of pest control whose major objective is to achieve desired levels of pest control in an environmentally responsible manner by combining multiple pest control measures to reduce the need for reliance on chemical pesticides; more specifically, a combination of pest controls which addresses conditions that support pests and may include, but is not limited to, the use of monitoring techniques to determine immediate and ongoing need for pest control, increased sanitation, physical barrier methods, the use of natural pest enemies and a judicious use of lowest risk pesticides when necessary.

It is important that any definition adopted for this program be consistent with state statutes, regulations, and policies. Gambusia fish cannot be released into waterways in MA as I understand it. And, pesticide applications around schools and daycare centers need to comply with IPM as per the Children and Families Protection Act.

Kim: Is it possible for the report to include area for schools without mosquito control listed on their IPMs? With questions such as how long did it take for emergency waver? Is the school at high risk while waiting? Good choice bad choice?

IPM def. are different for each agency using pest control. The def. on SRB web page best explains MA mosquito control. In which ever wording we use it should be said that the mosquito control projects are in compliance with all regulations and legislations put forth. We could also add footnotes to were other def. can be found like we have with other info in the report.

Larval Mosquito Control

Heidi: Specific suggestions: Permanent solutions vs. repeated treatments:

Can we ask districts whether they work with local DPWs or other local officials to address stormwater systems and clogged culverts that are determined to be repeated major sources of mosquitoes, and to plan or implement long-term solutions such as replacing culverts with better structures that enable fish to pass through and are less likely to become clogged? Or, whether they advise DPW on priorities for where municipal stormwater or road erosion is repeatedly clogging streams/ditches, and the problem could be solved through a one time fix instead of dredging the stream every year? Is such coordination and cooperation with municipal officials part of the districts' work, and if not why not?

Adult Mosquito Control

Source Reduction

Ditch Maintenance

Open Marsh Water Management

Heidi: Units of measurement: OMWM should be measured in "acres" or "square feet" rather than "footage."

Adult Mosquito Surveillance

Heidi: Just to clarify, we are asking for general language regarding the number of **traps** and how decisions are made as to where to place them, not precise locations

Kim: Trap locations should not be listed for the public. One is vandalism and the second is a false sense of security to those in other areas(species of mosquitoes in MA that carry and transmit illness have fly radius of up to 15 miles)

Biological Control Efforts

Heidi: Under Biological Control, please clarify whether the references to predatory fish and predatory invertebrates mean introduction of predators or enhancement of habitat for native predators. The latter is much more effective and ecologically sound.

Kim: Projects need funding for many things. DFW has denied many forms of biological control in the past but some projects are working with pilot programs. Its true mosq. fish are invasive in MA yet there are other species of fish that could be used such as sunny fish but again F&G don't like this idea either!!

Pesticide Usage

Heidi: Times of treatment, there should be a description of general seasonal and weather considerations, not a treatise on every detail and label requirements.

Kim: If we get into explaining times of treatment we will have to define the label laws.

Large Area Exclusions

Special Projects Summary

Fiscal Summary

Personnel Summary

Districts Reports: This section would list each District, contact info & the District 2008 Report?

- Berkshire County Mosquito Control Project
- Bristol County Mosquito Control Project
- Cape Cod Mosquito Control Project
- Central MA Mosquito Control Project
- East Middlesex Mosquito Control Project
- Norfolk County Mosquito Control Project
- Northeast Mosquito Control Project and Wetlands Management District
- Plymouth County Mosquito Control Project
- Suffolk County Mosquito Control Project

Reference Section(s) / Index: &/or future items to be addressed?

- **Enabling Legislation:** reference chap 252 how to find it & other enabling legislation & regulations applicable regulations effecting mosquito control.
- **Kim:** Each town also felt more needs to be done but were unaware of all the restrictions, *new legislation*, and how many agencies were involved with mosquito control.

TBD: Pending Sections &/or Future Items:

MEPA:

Heidi: Confused as to the relationship between this new reporting & public information available thru MEPA.

Tim: I cannot answer the question about MEPA, that will be for SRB and others to decide.

Heidi: Will these reports be utilized as part of the periodic MEPA update process? Clarification is needed of the role of annual reports vs. overall programmatic guidance documents. Both are important, and both should be broadly publicly accessible. They should be complementary. For example, the state's accepted definition of IPM (whatever that is determined to be) and specifics of how that is applied statewide through the Reclamation Board belong in overall guidance documents, and do not then need to be repeated in districts' annual reports.

Human Health & The Environment: Measuring the effects of activities:

Heidi: The reports should provide whatever information is available regarding how the districts are **measuring the effects of their activities on human health and the environment**. Again, this may be limited by existing resources but whatever information is being gathered should be reported, and

Efforts should be made to continually improve how efficacy is measured and prioritize where and what activities to conduct (i.e. applied IPM).

- **Overall comments:** The form will compile a lot of information on what is being done, but not much objective data on how effective that work is in reducing disease risk; how efficiently limited resources are being allocated to maximize effectiveness; or how decisions are being made to maximize effectiveness of the programs and minimize the impacts on public health and the environment of the actions taken. Until we have full GIS capability with metadata and standardized follow up monitoring protocols (and capacity to do that follow up work), we may never be able to answer all these questions. But, we should try as much as possible to make the reports as informative as they can be in this regard to assist in the continual evolving of the system consistent with IPM principles and Adaptive Management. It is not just how much work is being done but what the effects are that is important.
- **See also joint statement by the US EPA and Centers for Disease Control** regarding mosquitoes, mosquito borne disease, and pesticides.
<http://www.epa.gov/pesticides/health/mosquitoes/mosquitojoint.htm#ipm>

Note the recommendations for adherence to IPM and the following excerpts:

"Fish and game specialists and natural resources biologists should be involved in planning control measures whenever delicate ecosystems could be impacted by mosquito control practices. The underlying philosophy of mosquito control is based on the fact that the greatest control impact on mosquito populations will occur when they are *concentrated, immobile* and *accessible*."

- Kim Thanks for your comments. If you know of dump sites where people have illegally deposited tires or other debris on Mass Audubon lands, please inform us of these locations. There are a number of federal and state grant programs aimed at restoring fisheries and wetlands, which may assist with culvert replacements or stormwater improvements that can yield mosquito control as well as ecological benefits. Also, when municipalities or MassHighway reconstruct roads or rebuild culverts, there may be opportunities to improve culverts and drainage for multiple public benefits including prevention of storm damage to the road, improved fishery habitat, and mosquito reduction.

I realize the challenges are many at the landscape level, and resources as well as new partnerships are needed. Identification and prioritization of problem areas, and cooperation on pilot projects could help. Thanks for your efforts to encourage new cooperative initiatives.

Kim: Is it possible for the report to include towns that denied any extra from the projects when high levels of virus are found? Good choice bad choice, uneducated BOH? So that we know for the next year which towns need more public outreach?

Kim:

There is a known need for better surveillance of human impacts to pesticides which has been recognized by many mosquito control folks. AMCA and myself have been working on a federal level trying to receive funding for this across the U.S.

Restoration projects that restore fisheries or remove sources of sedimentation, this work should not completely fall on the mosquito control districts or their budgets. Who will help financially? Many of these projects may be owned by DFW, Audubon or Watershed.

Man made breeding sites also should be addressed in this report. Many of the sites are illegally dumped on yet are owed by DFW, Audubon, conservation, Amtrak, and Watersheds. I received a letter from National Heritage stating that they are not interested in cleaning up man made sites even if their property. Tire and illegally dumped items are expensive to bring to dump.(need for more team work here) This should also not completely fall on the MCPs or their budgets. Commonwealths tax payer pays now for both mosquito control and protected lands either priority habitats or conservation.

How will we address this while spending monies wisely??

Permanent solutions vs. repeated treatments zoning boards and other local departments need more education. Many repeated treatments are in fact owned by others than private home or town. (more team work between agencies is needed)

I like the idea of having **comment page** for future reference to better the annual report for 2009.